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Traumatic Peritonitis in the Bovine

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Traumatic peritonitis is of very common occurrence in bovines and is probably the cause of *at least* 70 per cent. of digestive disorders associated with the fore-stomachs. Adult animals are most commonly affected, especially in the winter months, possibly due to the more bulky winter foods aiding penetration of foreign bodies.

The reticulum is almost invariably the seat of puncture and objects commonly responsible are nails, wire and bass-broom bristles.

History.—There is usually a sudden loss of appetite and drop in milk yield and according to the farmer the animal "developed a grunt and has stoppage."

Symptoms.—The affected animal appears "wooden," an occasional painful moan may be heard, slight tympany of the rumen may be present, especially in the early stages, and the animal has a pained expression, with eyes bulging. Faeces, if passed, are coarse and undigested.

A more detailed examination usually reveals that the temperature is elevated and that the painful moan is emitted just before a rumenal movement commences. The temperature, if taken in the initial stages, may be found to be 104 to 105° F., but subsides rapidly within 24 hours to the region of 102·5° F. Rumen movements, especially at the outset, are very much reduced in number. Pulse is usually in the region of 55 to 60. Respirations and mucous membranes are generally normal.

The pain associated with the peritonitis is best demonstrated as follows:—

(1) By pinching of the spine in the thoracic region. This has the effect of causing the animal to crouch and the lengthening of the ventral surface of the abdomen which takes place "drags" on the inflamed area, causing the animal to grunt or moan.

(2) By percussion with the closed fist on the lower third of the chest cavity at the level of the xiphoid cartilage. If a localised peritonitis is present the animal will grunt and move back and forward in the standing or "cow-kick." The restlessness is very diagnostic as a normal cow may grunt when percussed in this region but she remains composed and unexcited.

The method of demonstrating pain by applying pressure with a stout piece of wood in the region of the xiphoid cartilage is not, in my opinion, satisfactory, as the animal, feeling the bar in position, braces herself to minimise the pain.

The peritonitis, which develops immediately after puncture by foreign body, is localised. The localisation is due, in my opinion, to (1) the relatively small amount of infective material which escapes, (2) the high powers of resistance of the bovine peritoneum, (3) the large areas of smooth surface in this region, and (4) the speed at which adhesions develop to enclose inflammatory reaction.

A high percentage of cases recover without any further complications developing, and the animal is normal again in five to six days.

Complications which may develop are:—

(1) Abscess formation on the peritoneal surface, in the liver or in the fat between the reticulum and the omasum.

(2) Infection of the chest or its contents.

Whether either of these complications develops depends on the position of puncture in the reticulum, and the shape, size and angle of penetration of the foreign object. Punctures in the left antero-ventral part of the reticulum are dangerous owing to the proximity of the pericardium and even a tin-tack or a boot sprig puncturing in this area can cause a fatal pericarditis. Punctures on the right antero-ventral aspect are not so dangerous. Small objects and objects which can be classified as small objects due to their shape (*e.g.*, a piece of wire with a bend in it which prevents further penetrating movement) which puncture in this area simply cause a localised peritonitis which heals by adhesion in five to six days, and no further trouble is noticed, due to the fact that the puncturing object is now lying in the middle of an area of the reticulum which is immobilised by adhesion and there is no subsequent movement to aid further penetration.

Long objects puncturing in this area, especially if they puncture at right angles to the surface, cause the localised area of peritonitis as usual, but abscess formation almost invariably develops in the adhesions. This is due to repeated escape of infected material resulting from the constant lateral movement of the foreign body with the waves of movement of the ingesta. Such abscesses, in my opinion, take months to ripen and rupture into the peritoneal cavity, causing a more generalised peritonitis in the ventral part of the abdomen.

In a few cases puncture in a backward direction in the region of the opening into the omasum has been encountered. In these cases the animal has been more acutely ill due to rapid spread of infection in the fat between the reticulum and the omasum.

Treatment.—Operation is not necessary in all cases. Those cases which show signs of a simple localised peritonitis, *i.e.*, temperature 102 to 103° F., slight tympany and a painful moan, should be kept under observation and treated by starving and the administration of mild purgatives. If complete recovery does not take place in five to six days, or if the temperature rises and persists above 103° F., operation is advisable as, in my experience, a steady temperature of 103·5° F. or over, with other typical symptoms, indicates either infection of the abdominal fat or of the chest. Raising of the animal's forequarters is possibly beneficial but unnecessary if the animal is starved, as the effect is similar.

Prognosis is difficult and it is best to explain possibilities to the owner.

Differential Diagnosis

(1) Pleurisy (simple or acute tuberculous).

Friction sounds are usually heard on auscultation of the chest. There is no involvement of the abdomen. The owner should be questioned as to whether, during the last month or two, the animal has ever been off colour or shown signs of tympany, as pleurisy can quite easily be subsequent to a puncture which took place months before.

(2) Generalised or semi-generalised peritonitis.

Here the whole abdomen is painful as evidenced by the tense feel of the abdominal muscles and the pain shown when any portion of the lower part of the abdomen is forcibly palpated or pressed.

(3) Acute tuberculous peritonitis.

Consider condition of animal, auscultate chest cavity and examine for other signs of tuberculosis.

DESCRIPTION OF OPERATION

Preparation of the animal.—Withhold food and water immediately decision to operate is reached. Clip and shave an area 15 in. long and 9 in. wide on the left flank in the area immediately behind the last rib and below the transverse processes of the lumbar vertebrae. Shaving is easily and quickly carried out by using an ordinary double-edged razor blade held firmly between two fingers and the thumb.

Instruments, etc., required.—Sterile operation cloths may be used but are unnecessary. Syringe (10 or 20 c.c.), one long strong and one long fine hypodermic needle, scalpel dissecting forceps, scissors, 4 ft. length of fine pleated silk, catgut, round and bayonet-pointed needles, sterilised cotton wool for swabs, sulphanilamide powder, local anaesthetic (about 70 to 80 c.c.) and ʒi tinct. benz. co.

Restraint required.—Have the animal held by the nose, chained in her standing or box. Tie the tail to one hind leg.

Method of operation.—Wash the shaved and surrounding area with soap and Dettol. Paint the shaved area with pure Dettol. Inject local anaesthetic subcutaneously in a line 6 to 8 in. long down the flank, beginning just below the lumbar processes and about 1½ to 2 in. from the last rib. Allow a few minutes for the local to act and then make a 6 to 8 in. incision through the skin. Anaesthetise and then cut straight through the exposed abdominal muscles. It is perhaps best in the first instance to cut through to the peritoneum only a small part of the muscles at the upper end of the wound. Having done this push a finger down between the muscles and peritoneum and ther inject some local into the space formed to anaesthetise the very sensitive peritoneum. Once the muscle incision has been completed cut through the peritoneum.

Next, using a bayonet-pointed needle and silk, suture a circular or oval area of the exposed rumen to the skin edge. A continuous suture starting at the upper end of the wound is best, and, of course, the sutures through the rumen should only go through the

muscular coat. Having fixed this area of the rumen insert two sutures 1 in. apart (leaving long ends) in the middle of the exposed rumen surface. An assistant holds these sutures to raise the exposed rumen wall. This is a definite aid when cutting the rumen and also by crossing them the rumen incision can be closed to prevent escape of infection should the animal cough. The incision in the rumen should only be long enough to admit the thickest part of the arm. A sterile rubber armlet is slipped on the arm and the hand and arm is then inserted into the rumen across the surface of the contents and then down into the reticulum. Rumenal contents can be pressed out of the way by the arm once the hand is travelling down the far side. It is unnecessary to remove any of the rumen contents.

As the contents of the reticulum are fluid, search for the foreign body is easy and it is usually found in a second. Should no projecting foreign body be located, feel for an adherent area of the wall and search this area thoroughly with the fingers. When the arm is withdrawn pause and press the rumen contents out of the way before withdrawing the hand.

The rumen surface is swabbed clean before the incision is closed by Czerny-Lembert catgut sutures. Dust the area with sulphanilamide powder and then remove the two single and the continuous silk sutures. Close the peritoneum with a continuous catgut suture and then dust the peritoneum and surrounding muscle with sulphanilamide. The muscles are then roughly drawn together by a continuous catgut suture before the skin incision is closed, using silk interrupted blanket type sutures. About 1 in. at the bottom of the skin wound should be left unsutured as a drainage opening. Friar's balsam is then smeared over the wound and a fine strip of cotton wool laid over it to give protection.

After-treatment.—Administer sulphanilamide per os and do not feed too heavily for a day or two. If the peritoneal suturing is not airtight some subcutaneous emphysema may develop, but this is unimportant. Healing is usually by first intention, but some discharge may commence about a week afterwards, due to fat necrosis. Skin sutures should be removed about the tenth day.

The above technique has been used in a series of 20 operations carried out within the last 18 months, and has proved very successful.

It is interesting to note that 24 adult animals out of 57 dressed in the local knacker's yard during the month of February showed signs of healed lesions of traumatic peritonitis.

Benzenehexachloride. A Promising New Acaricide

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Following closely on the recent discovery of the almost miraculous insecticidal potency of 'DDT,' (dichloro-diphenyl-trichlorethane) it is surprising to find another substance which, on preliminary trial, promises to be at least as good, and in some ways even better than, DDT. Through the courtesy of Imperial Chemical Industries, Ltd., we have recently had the opportunity of carrying out a few trials with a substance temporarily designated '666,' which has been recognised by their research workers as possessing unusually active insecticidal properties. '666,' which is now stated to be benzenehexachloride, or 1:2:3:4:5:6 hexachlorocyclohexane, has the general formula $C_6H_6Cl_6$. It is a remarkable substance in that almost all its insecticidal properties are derived from only one of the isomers. As no practical advantage is likely to be derived from the isolation of this one isomer, the crude substance will doubtless be used in the control of the arthropod parasites of plants and animals and has been given the commercial name gammexane.

A preliminary trial carried out in this laboratory on the action of benzenehexachloride on guinea-pig lice showed it to be at least as effective as DDT, but in whatever other directions it may excel, its action on parasitic acari promises to be one of the most potent, as is indicated by the few observations here reported.

A series of comparative trials was carried out on a group of rats, more or less severely affected with notoëdric mange on the ears, nose, tail and feet. The test substances were prepared as solutions in liquid paraffin and were applied to the affected areas only, without preliminary washing or cleansing, the hairy parts of the body being left undressed. Comparisons were made in the first trial between tetraethylthiuram-monosulphide ('Tetmosol') benzyl benzoate ('Ascabiol'), and DDT: rats treated with liquid paraffin alone were used as controls. Five treatments were carried out in the first series of observations, the applications being made on alternate days by painting the test substances on to the affected parts with a soft camel's hair brush. After each treatment the rats were placed in sterilised cages of the 'bin' type, open only at the top, to avoid the possibility of reinfection from their surroundings, and were examined six weeks after the last treatment. At this examination the two control rats were found to be very badly affected; one of the two rats treated with 1 per cent. DDT was almost as badly affected as the controls.* The ears, nose and feet of the rats treated with 1 per cent. 'Tetmosol' appeared to be relatively free from infection, but several active lesions remained on the tail. The two rats treated with '666' appeared to have been completely cured, no trace of any lesions being seen on any of the areas which had previously been affected. In three months' time it was still not possible to detect infection in these rats, whereas the rats which had been treated with 1 per cent. 'Tetmosol' or 1 per cent. DDT were now showing all the symptoms of a severe infection, the tail and ears being covered with scabs.

In a second series direct observations were made on the action which the drugs had exerted, by examining mites picked out from lesions in the tails of affected rats. On this occasion benzyl benzoate was included among the test substances, which were again applied as 1 per cent. solution in liquid paraffin, with the exception of benzyl benzoate, for which olive oil proved a better solvent. Two treatments only were given, painting on to the unwashed skin with a camel's hair brush being the method followed, as in the first experiment. The second treatment was carried out six days after the first, and examination for the effectivenss of the treatment was made 14 days later. Particulars of these observations are given in the following table:—

Table 1.—The effect of the various acaricidal substances on *Notoëdres* as observed on mites dissected from the rat's tail 14 days after the second and last treatment.

Test Substance.	Effect on Acari.
Liquid paraffin (control)	Living acari found in most of the lesions examined.
DDT, 1 per cent. ...	Ten living acari found after very little searching.
'Tetmosol,' 1 per cent.	Six living acari found.
Benzyl benzoate, 1 per cent.	Living acari easily found in most of the lesions.
'666,' 1 per cent. ...	No living acari found.

Although no living acari could be found in the rats treated with '666,' examination of some of the larger scabs, after softening in 10 per cent. caustic potash, showed a number of larvae and a few adults. These adults showed signs of decomposition but the larvae appeared to be normal, and it is possible that they may have been alive at the time that the scabs were placed in the caustic potash. Further search, however, failed to reveal living acari, and it is considered that a better explanation for the presence of the larvae may be found in an apparent prolonged killing action of the '666,' which may have been able to destroy larvae hatching from eggs several days after the treatment had been applied.

A third trial was made in which the strength of the DDT was increased to 2 per cent., and that of '666' reduced to 0·1 per cent., two dressings only being applied as in the previous experiment. Observations were made on the effectiveness of the dressing three weeks after the second application, and are shown in the following table:—

Table 2.—The effect of the various acaricides on *Notoëdres* as observed on mites dissected from lesions in the rat's tail 21 days after the second and last treatment.

Test Substance.	Effect on Acari.
Olive oil (control) ...	Living acari found in most of the lesions examined.
DDT, 2 per cent. in liquid paraffin	Living acari found in many of the lesions.
'666,' 0·1 per cent. in liquid paraffin	Living acari found in several lesions.
Benzyl benzoate, 1 per cent. in olive oil	Living acari found in most lesions.
'Tetmosol,' 1 per cent.	Living acari found in many of the lesions.

* One of the rats that had been dressed with 1 per cent. DDT in liquid paraffin developed symptoms of intoxication within 24 hours and died. Two other rats were subsequently dressed with a 10 per cent. solution in the same way and developed the same symptoms, which took the form of a hyperaesthesia increasing in intensity until any sudden noise or movement was sufficient to induce generalised clonic spasms which became continuous in the later stages and led to the death of the rats.

Discussion

These preliminary trials on *Notoëdres muris* in the rat appear to give a clear indication of the superiority of the new insecticidal substance benzenehexachloride as an acaricide over the two substances tetraethylthiuram-monosulphide and benzyl benzoate which have recently been recognised as possessing outstanding acaricidal properties. As the substances were applied only to the affected (hairless) parts of the rats, and the scabs were not previously removed by washing, the test is thought to have been a relatively severe one. In view of the wandering habits of *Notoëdres muris* as observed by Gordon and Seaton (1941) it may be presumed that some of the acari would be on the general body surface and away from these parts at the time that the treatment was carried out, and so would not be subjected to the immediate action of the drug. This appears to suggest that '666' possesses a prolonged acaricidal effect, a kind of activity which was considered by Bedford (1928) to be a most valuable asset to an efficient sheep dip. It seems not unlikely, therefore, that '666' will prove of value in the control of sheep scab.

The rather inferior results with 'Tetmosol' and 'Ascabiol' as compared with those obtained by Gordon and Seaton, may probably be explained by the affected parts of the rats having been left unwashed before the application of the treatment. The presence of dried exudate on the skin is, however, a normal hazard which must be overcome by any substance used in the form of a dip, and in so far as these preliminary observations apply to the use of '666' in that form they appear to conform to the practical requirements.

No signs of skin irritability were observed in any of the treated rats and it is concluded that benzenehexachloride is likely to prove a most useful substance for the treatment of acarine disease.

Summary

A new insecticidal substance benzenehexachloride ('666') has been tried as an acaricide in rats infected with *Notoëdres muris* and has proved very effective when used as a 1 per cent. solution in liquid paraffin. On the unwashed skin it was found to be superior to either benzyl benzoate ('Ascabiol') or tetraethylthiuram-monosulphide ('Tetmosol').

Dichloro-diphenyl-trichlorethane (DDT) when used in the same way proved comparatively ineffective.

No evidence of skin irritation was observed with '666.'

References

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Bedford, G. A. H. (1928.) *13th and 14th Repts. Director of Vet. Educat. and Research.* Pretoria. 861.

Toxicity Trials with the Insecticide '666' on Rabbits, Sheep and a Bovine

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A good practical insecticide should be efficient in destroying the insects against which it is used and when used against insect pests of agricultural importance it is essential to know whether the insecticide is harmless or dangerous to domestic stock. The compound '666' has been used in trials against locust swarms as a bait poison. It is, therefore, important to investigate whether there is any danger to stock grazing over such baited areas and also to enquire if bait containing '666' would adversely affect stock if eaten inadvertently.

Dr. R. H. le Pelley, Agricultural Entomologist, kindly placed at the disposal of this Institute some '666' for toxicity trials on stock and the results of these experiments are recorded here.

Technique

This compound is a white powder which does not dissolve appreciably in water and quickly settles to the bottom. The animals used were drenched with weighed amounts of the material which was suspended in a thin glutinous gruel obtained by boiling a little flour in water. This vehicle for suspending the powder proved effective and it was possible to drench the test animals before the powder deposited at the bottom of the apparatus.

The sheep and bull were housed during these tests and fed on hay and lucerne, whilst the rabbits were caged singly and lived entirely on leaves of sweet potato greens.

Trials at 0·5 g. of '666' per kg. live weight

Two rabbits were dosed at this rate daily for three days and two sheep for two days.

	Live weight	Daily Amount	Total Amount of '666' Ingested	
Rabbit 1	1·8 kg.	0·9 g.	2·7 g.	Remained healthy
„ 2	1·56 kg.	0·78 g.	2·34 g.	„ „
Sheep 6942	35·0 kg.	17·5 g.	35·0 g.	„ „
„ 6764	40·0 kg.	20·0 g.	40·0 g.	„ „

Trials at 1·0 g. of '666' per kg. live weight

At this rate two rabbits and two sheep were drenched daily for three days. One rabbit died after the third dose and the other on the fifth day of the experiment. *Post-mortem* examination of these rabbits revealed a recent acute broncho-pneumonia in both animals. There were no other pathological changes present, nor was there any detectable disturbance of the gastro-intestinal tract. These rabbits died of "drenching pneumonia." The two sheep remained healthy and did not go off their food during or after the test.

	Live weight	Daily Amount	Total Amount of '666' Ingested	
Rabbit 3	2·0 kg.	2·0 g.	6 g.	Died broncho-pneumonia
„ 4	1·7 kg.	2·0 g.	6 g.	„ „
Sheep 0001	32·3 kg.	32·3 g.	96·9 g.	Remained healthy
„ 7241	32·7 kg.	32·7 g.	98·1 g.	„ „

Trial at 3·0 g. of '666' per kg. live weight

An 18-months bull weighing 274 kg. was given a single drench of 822 g. of '666.' This animal refused food for 36 hours afterwards and was very dejected and nauseated. There was no temperature disturbance and he defaecated and urinated normally. Towards the end of the second day the bull started to feed and was observed for two weeks, during which time he was normal and healthy.

Trials at 4·0 of '666' per kg. live weight

Two sheep were dosed once with this relatively large amount of the insecticide and they remained normal, eating as usual.

	Live weight	Amount of '666'	
Sheep 0002 ...	37·7 kg.	150 g.	Remained healthy
„ 0003 ...	37·3 kg.	149·2 g.	„ „

Discussion and Conclusion

The experiments described show that '666' is not toxic for domesticated animals in the quantities tried. This compound is effective in the field as a locust poison when incorporated into a suitable bait at 3 to 5 per cent. Hence the results obtained in these trials indicate that a sheep could eat 3 to 5 kg. and cattle 16 to 27 kg. of poisoned bait without harm. In a campaign for the destruction of locust hoppers the bait is scattered over large areas, and because of this scattering in small amounts of poison-bait it is very improbable that a grazing animal could pick up as much of this compound as the experiments have proved to be harmless.

Three Europeans and three Africans assisted in drenching the test animals; one European suffered from a transient irritation and reddening of the skin wherever this compound came into contact with the skin. This pruritus lasted two to six hours.

Weekly Wisdom

"... *Of all things we are more conservative about our foods than anything else. We change our religion and, in these days of haphazard marriage and divorce, our wives and children; but our food habits, no! This is not astonishing when we think of it, for the desire for food begins earlier and lasts longer than the sex impulses, and religious impulses rarely awaken before puberty, usually not till maturity, and sometimes not at all. . . .*"—Professor V. H. Mottram. (1940.) "Healthy Eating" (Cassell).

CLINICAL COMMUNICATION

Nervous Phenomena of Senile Decay in Dogs as Compared with Ariboflavinosis in Man

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Early in October I was requested by a colleague to examine a 12-year-old Bassett Hound bitch of great sentimental value, which for many weeks had manifested curious nervous phenomena.

From the history, observation and examination, the following facts were elicited. The bitch was obese (weight about 50 lb.); of a very apprehensive and nervous temperament, and exhibited varying degrees of hyperaesthesia. Sometimes, to touch the hairs or the toes lightly caused a spasm of pain or fear. There was a mental dullness and marked imbalance, and loss of co-ordination in movement. The forelegs were sometimes crossed; the head held low and often resting on the ground to aid in balancing the body.

Occasionally, during attacks of apparent dizziness, the head would slowly veer round to one side, and eventually the animal would fall upon the opposite side. Even whilst lying upon the sofa, the dog would seem to be attacked by giddiness and, in its apprehension, would step down on to the floor and stagger around slowly and aimlessly until it encountered something against which it could lean to steady itself.

Respirations were not increased by these perambulations. To mount upon its bed (about a foot above the floor) it would employ the forelegs one at a time, until both were firmly planted, and then roll on to the cushion as though intoxicated.

Examination of the mucous membranes revealed a definite degree of anaemia, and there was more or less anorexia. The bowel action was torpid, sometimes two days passing without defaecation. It was thought, however, that the dog feared to assume the attitude necessary for this act, lest it should fall over, and probably deliberately refrained from stool. Radiographs were negative.

Upon my first arrival the dog was recumbent and devoid of all exciting influence. I took that early opportunity of auscultating the heart, as I am convinced that only under conditions of normality can one gain an appreciation of the true state of the heart and pulse. The valvular sounds and the rhythm were unexpectedly good. But the soft weak pulse seemed to point to a cardiac hypo-myotonia which was in consonance with the general muscular weakness observable.

The patellar reflex was weak, indicating some organic disease or degeneration of the nervous system. The pupillary reflex was slight, and very slow to light, but further observations as to inequality were upset on account of the animal becoming suddenly nervous.

So far, nothing had been done about urine investigation and it certainly seemed unlikely that such examination would be able to throw much light upon the problem. My first impression was this: Here was an animal which had attained the age of 84 (as compared with the human life) and which therefore was exhibiting symptoms of senile decay, *i.e.*, faulty metabolism and degeneration of the nervous system; was, in fact, exhibiting the muscular weakness and inco-ordination, mental dullness and senile manifestations normally to be expected. One might argue that numerous dogs attain the age even of 20 before they exhibit such signs. The answer is that many humans are quite senile between 56 and 60, whilst others may retain their mental and physical virility up to 70 or more. In this case, whilst the valves appeared unimpaired, the contractile power of the heart seemed weak; there was anaemia, and certainly a neurasthenia.

The question arose: Was this a case of normal senile decay or was it an avitaminosis? The decision was difficult but the line of treatment suggested was a course of Dibexin in large doses, plus 1 gr. digitalis pill twice daily. In addition, it was thought desirable to administer a potent compound nerve tonic which would also counter, to some extent, the anaemic condition. A preparation suitable for this purpose would contain free phosphorus and reduced iron.

The diet was to exclude fat forming carbohydrates except in small amounts, but was allowed to include red meat, raw liver, egg and ample milk, fish, rabbit and poultry (all of which were available), plus a teaspoonful of yeast twice daily.

It seemed well within possibility that the animal was a victim of a vitamin B deficiency, though whether of riboflavin, aneurin or some other member of the B complex, could not be decided.

It is, however, well known that deficiencies in these factors are responsible for degeneration of the nervous system, cardiac dysfunction, gastro-intestinal disturbances and anorexia. Dibexin (P.D. & Co.) is a combination of aneurin, riboflavin and vitamins $B_{1,2,6}$ with nicotinic acid; and there is plenty of evidence in the literature to support the wisdom of prescribing the whole B complex in any case which obviously needs the anti-neuritic vitamin. There is further evidence to support the use of massive doses in severe illnesses, especially when circumstances preclude parenteral administration; as in this instance.

In some respects the case resembled, at first sight, one of spinal meningitis in which there is marked hyperaesthesia; stiffness; pain; reflexes at first increased but later lost; some fever; early contraction and later relaxation of sphincters with, probably, a terminal paraplegia.

On the other hand, loss of balance and of co-ordination are not features of spinal meningitis, but rather of lesions in the cerebellum and mid-brain respectively. Moreover, there was no pyrexia recorded in this patient, nor any observable alteration in the sphincters.

One had to decide whether the ataxia resulted from dysfunction of the local brain areas mentioned, in consequence of an avitaminosis. I concluded this possibly was the case, and prescribed accordingly.

On my journey back to London I was looking through some back numbers of the *British Medical Journal*, and by a curious coincidence I read an article by Dr. H. S. Stannus, in the July 29th number, entitled "Some problems in riboflavin and allied deficiencies." Striking passages from this article, which seemed to shed some light on the case just examined, were these:—

"To the syndrome under discussion I admitted a group of neurological symptoms, all on the sensory side, chief among which were a sense of muscular weakness, inco-ordination, ataxia, and paraesthesia—unassociated with any real loss of power, any loss of sensation, or any muscular wasting—together with loss of visual and auditory acuity. Though in the past these symptoms have been referred to by some authors as due to a peripheral neuritis, possibly influenced by ideas associated with beriberi, they have in fact no relation to those of that disease. . . .

"While I have suggested that these neurological symptoms are due to a hyporiboflavinosis, there is the possibility that some other factor may also be involved. . . . These neurological symptoms are of the same order whether associated with pellagra or not. . . .

"For a fuller description I am going to the case of an English child whom I had under my care some ten years ago, suffering from an acute recurrence of pellagra, exhibiting symptoms which we should now refer severally to nicotinic acid and riboflavin deficiencies. This child—incidentally, the first case of pellagra in this country ever known to have recovered—I was able to watch constantly day by day during a period of observation, and during treatment, which was with yeast and liver extract. Nicotinic acid and riboflavin were then unknown.

"The symptoms were entirely on the sensory side; together they formed a complete picture of the 'cerebellar syndrome,' as that term has been used in its wider sense to include muscular weakness (cerebellar asthenia), muscular hypotonia, ataxia, asynergia, etc., together with vertigo, typical gait, and characteristic pendulum knee-jerk. At the same time there was some apparent mental apathy, hyper-emotionalism, as shown by the ease with which the child was moved to laughter or tears. . . .

"I am going to suggest that the disorder is located in the capillary bed serving certain areas in the central nervous system and that the symptoms are the expression of a metabolic disturbance in nervous tissue produced by the capillary dysergia, resulting from hyporiboflavinosis. . . .

"For the necessary facts I must turn to observations made on animals. The metabolic activity of brain tissue is high; in the dog, Craigie puts the oxygen consumption at 10 per cent. of the total for the whole body, whereas the brain weighs only 2 per cent. of the weight of the animal. The 'capillarity'—that is to say, the relative number of capillaries in nervous tissues—varies very considerably in different areas and in different nervous-tissue elements. *It is greatest in those areas and in those elements in which functional activity is greatest and metabolism highest. Those elements which have the greatest functional activity are the first to suffer the effects of any interference with their normal metabolic needs.* [The present writer's italics.] . . .

"For its proper functioning this system of fine strands of protoplasm demands a continuous expenditure of energy; lack of oxygen, etc., must soon bring about loss of function. . . .

"The comparative figures for capillary vascularity appear to me most significant. They offer, I believe, the explanation of the localisation of the group of neurological symptoms that I have described. The cerebellar syndrome is due to a disorder of function of the cerebellar 'neurophyl' as a result of being a tissue with high capillarity. . . .

"The *post-mortem* findings in riboflavin deficiency in animals are not very conclusive in regard to the nervous system and there is no certainty concerning the pathological changes in the viscera in man in nicotinic acid and riboflavin deficiencies. It is just worth remembering, however, that degenerative changes occur in the heart muscle in pellagra, that the liver always shows fatty changes most marked perhaps in infantile pellagra, whilst in the dog 'yellow liver' is characteristic of ariboflavinosis.

"Scott mentions myocardial changes with dilatation and congestion of the cardiac capillaries, and an angioma-like condition of the heart. . . .

"I have considered the whole syndrome for the sake of convenience, as due to riboflavin deficiency, but some uncertainty must still exist as to whether any other factor in the B_2 complex plays a part. . . . All the symptoms of the syndrome respond to treatment with yeast. . . ."

Seven weeks later, information came to hand that this bitch had not improved under the suggested therapy. One is, of course, always left in some doubt as to whether an owner (faced with the continuous and determined opposition of a dog to having anything forced upon it or done to it) has really assiduously carried out instructions, or whether, out of mistaken kindness, the prevailing thought has not been "Why worry and upset the poor thing?"

If, on the other hand, the B complex had been regularly administered, without benefit, then one is rather thrown back upon the original supposition that the malady arose from senile decay—for which there is no remedy.

It has, however, been instructive to see how closely related may be the neurological symptoms arising from either cause. Certainly had the patient been young or middle-aged, it would have been necessary to have given very serious consideration to the avitaminosis hypothesis.

ABSTRACTS

[Pentothal Sodium as a Narcotic in Cattle. Henderson, W. M. (1944.) *J. comp. Path.* **54**. 245-247. (1 table, 4 refs.).]

This barbiturate compound [sodium ethyl (1-methyl-butyl) thiobarbiturate, Abbot] was tried out on 1½- to 2-year-old Devon steers averaging 600 to 800 lb. weight when restraint for minor operative procedures was necessary. The important features of rapid narcosis and prompt recovery without excitement or struggling essential for these operations were fulfilled by this drug.

Forty-seven steers received dosages of 1, 2, 3 and 4 grammes in 10 per cent. watery solution quickly injected into the jugular vein. If narcosis was produced the animal fell to the ground in a few seconds and it was complete in two minutes.

A dose of 3 grammes was found most effective for the purpose, smaller doses failing to induce narcosis in a number of cases.

The effects of the four doses tried varied from inco-ordination of movement only, through light and deep narcosis to light anaesthesia.

Henderson suggests that a wide application of this drug for narcosis or preliminary to inhalation anaesthesia is possible. No attempt to maintain the anaesthesia produced in two of his cases was made, but, by analogy with human practice, the administration of further small amounts of the drug would probably have done so.

The present cost of dosage for large animals calls for careful selection of appropriate cases.

C. V. W.

* * * * *

[Actinobacillosis in Sheep. Taylor, A. W. (1944.) *J. comp. Path.* **54**. 228-237.]

Actinobacillosis in sheep is more widespread than is generally appreciated. One reason for this is that the lesions which characterise the disease in sheep have little in common with those found in cattle, *e.g.*, "wooden tongue." Furthermore, being sporadic in origin, little attention is paid to individual cases of disease, except when valuable animals become affected. When such cases have been investigated in the past, the infection has been attributed to *B. purifaciens*, an organism which is now regarded as being identical with *Actinobacillus lignièresi*. Further evidence in support of the identity of these organisms is provided in this paper.

Taylor states that, in the course of routine diagnosis, actinobacillosis has been encountered in the counties of Moray, Aberdeen, Perth, Berwick, Roxburgh and Dumfries, and is known to practitioners in many other parts of Scotland. On some farms it occurs year after year. It seems to be most common in Scottish Blackface sheep, particularly in adult rams. In many cases it is difficult to establish the precise mode of entry of infection into the tissues but in others there seems to be no doubt that it is a result of wound infection.

The lesions are not essentially fibrous or granulomatous in nature as in cattle but take the form of thick-walled abscesses containing viscid greenish yellow pus which may or may not contain "granules." These lesions are most commonly seen in the skin, subcutaneous tissues and lymph nodes in the head and also in the prescapular lymph nodes and lungs. The bones of the head are also sometimes involved but actinobacillosis has not been observed in the tongue in sheep.

The effect of sodium and potassium iodide therapy was studied in two diseased sheep and the results suggest that such treatment may be of value as in cattle.

G. D.

* * * * *

[The Parasitic Actinomyces and other Filamentous Micro-organisms of the Mouth. Rosebury, T. (1944.) *Bact. Rev.* **8**. 189-223.]

In the course of a review of the characteristics and relationships of the causal organisms of actinomycosis and of salivary calculus in man, special attention is paid to the epidemiology of actinomycosis in man and animals.

Actinomycosis is defined as a "subacute or chronic usually progressive disease of cattle and other animals and of man, characterised by the development of indurated granulating swellings particularly in connective issue, by suppuration usually of limited extent, and by the presence in the pus of *Actinomyces israeli* (known to many as *Actinomyces bovis*), demonstrable microscopically, culturally or both." The author states that taking the evidence as a whole there is no doubt that this organism is the causal agent of true actinomycosis in man and animals. It is an organism which is widespread in the mouth and throat and its growth requirements are such as to make it incapable of existence under saprophytic conditions outside the body. The theory of Bostroem which regards actinomycosis as an exogenous infection resulting from injury with grass, straw or grain carrying the infecting agent, is untenable. Actinomycosis is not an occupational disease in man and there is no evidence to suggest that the disease is more common in farmers and other agricultural workers than in mechanics, clerks and urban groups generally. No instance of actinomycosis in man has ever been clearly traced to contaminated food.

On the other hand, potentially pathogenic *Actinomyces bovis* can frequently be found in the human mouth and throat in such conditions as chronic tonsillitis, dental caries, gingivitis and pyorrhoea, although there is no reason to believe that the organism plays any part in the aetiology of these conditions. It is probable that the organism is also commonly present in the healthy mouth and that it proliferates in conditions contributing to poor oral hygiene. For these and other reasons the endogenous nature of the disease seems inescapable.

Whilst the source of the causal organism appears to be no longer in doubt, just how infection of the tissues occurs still remains obscure. Something more, and less common, than local trauma seems to be necessary. It is not without significance, however, that actinomycosis in man is not infrequently associated with tooth extraction or other injury to the mouth or throat, with wounds infected by human teeth or with the aspiration of an extracted carious tooth or tooth fragment. The very close association between the formation of salivary calculus or tartar and the presence of *Actinomyces bovis* suggests that these deposits may not be without significance in the pathogenesis of actinomycosis. This, however, requires further investigation.

Regarding the manner of formation of tartar, it appears that these concretions are formed by precipitation due to the action of oral micro-organisms. Of these, *Actinomyces bovis* seems peculiarly capable, as by growing as a branched mycelium adherent to tooth surfaces it not only forms a stroma for tartar deposition, but serves to attach it firmly to the teeth. The presence of viable *Actinomyces bovis* in tartar has led to the view that the detachment of such concretions may play a part in the pathogenesis of the disease.

G. D.

REVIEW

[Lewis's Medical, Scientific and Technical Lending Library—Catalogue. H. K. Lewis & Co., Ltd., 136, Gower Street, London, W.C.1. Subscribers 12s. 6d. net; Non-subscribers 25s. net.]

Lewis's Medical, Scientific and Technical Lending Library was established in 1848. This is a new edition of the catalogue revised up to the end of 1943. It includes the titles of about 24,000 books and every book is the latest revised edition. It is stated that the catalogue includes all works of any importance (English and American and also foreign works when translated into English), on the subjects dealt with.

Part I gives a list of authors and titles (714 pages) and in Part II the names of the authors of the books are arranged in a classified index of subjects (208 pages).

There are eight veterinary headings, Veterinary Bacteriology and Pathology (seven books), Veterinary Obstetrics (four), Veterinary Science: General (46), Veterinary Science: Domestic Animals (36), Veterinary Surgery (seven) and Veterinary Therapeutics (ten).

Lewis's subscription library is used by students and scientists. The new catalogue is a most useful reference book and invaluable to the users of the library.

TREATMENT OF PEDICULOSIS IN CATTLE

Studies of the bionomics, morphology and therapy or the more common lice of cattle made at the North Dakota Agricultural Experiment Station, revealed the presence of four species: *Haematopinus curysternus, Linognathus vituli, Damalinia bovicola,* and *Solenopotes capillatus*, with the first named the predominant one. Observation on 550 animals showed that not more than one species is usually found on given animals and that the heaviest infestations were among stabled cattle.

Because rotenone and pyrethrum are scarce, tests were made of nicotine, naphthalene, paradichlorbenzene, sabdilla seed, thanite, phenothiazine, and sodium fluosilicate, diluted with sulphur, wheat flour, or bentonite. Sulphur dust containing not more than 1 per cent. of nicotine was found the most satisfactory, killing lice in five minutes. The action was slower when bentonite was used as the diluent. As little as 0·25 per cent. of nicotine in sulphur was effective. Where nicotine is not available, sodium fluoride or fluosilicate, two parts, phenothiazine one part, and diluent five parts gave excellent results against both biting and blood-sucking lice. Dips are used only in the warmer months.—North Dakota Agric. Exp. Sta., Bull. 324 (1943).

Questions and Answers

"Questions and Answers" will be published on alternate weeks.

The submission of questions for inclusion in this column will be welcomed: they can relate to any aspect of veterinary work. For purposes of record, each question is numbered, and those submitting questions are required to furnish (not for publication) name and address.

Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.

All communications should be addressed to the Editor.

Records in Panel Herds

Q. LXVII.—*I am experiencing difficulty in keeping records of the extent of disease, etc., in my panel herds. Can you suggest a method which is simple and which would enable different assistants to obtain a concise picture of disease in the herd should more than one veterinary surgeon attend the herd?*

A.—Difficulties experienced in recording the results of one's examination and treatment of herds offer one of the greatest barriers to successful disease control in the Survey Scheme. It is unfortunate that a practical uniform system has not been universally adopted throughout the country.

In the writer's experience, abortion and infertility records are best made on a sheet which is kept handy in the dairy or cowshed, and for this purpose he uses a calving record form as illustrated. An additional column can be conveniently included to record dates of vaccination against abortion.

Name and Address of Owner of Herd.....

Address of Farm where Herd is kept..... From..... To.....

THE CONTROL OF STERILITY (Difficulty of Getting in Calf)

1. Avoid long intervals between Calving and Service.
2. Carefully keep these records.
3. Report to the Veterinary Surgeon at once:—
   (*a*) Cows not coming into season within 60 days of Calving (Col. 2).
   (*b*) Cows showing irregular heat—normal 18-22 days (Col. 2).
   (*c*) Cows showing "Whites" (Col. 8).
   (*d*) Cows not holding any of three successive services (Col. 3).

1	2	3	4	5	6	7	8	2	3	4	5	6	7	8	9
No. and/or Name and Description of Cow or Heifer	Dates of Service	Date Due to Calve		Date of Calving or Abortion	Was Calf "Full-Time"?	Was After-birth retained	Did Animal Discharge or Show "Whites"?	Dates of Service	Date Due to Calve		Date of Calving or Abortion	Was Calf "Full-Time"?	Was After-birth retained?	Did Animal Discharge or Show "Whites"?	Remarks
1															
2															
3															

At the first visit to the farm the names or and numbers of all cows in the herd are recorded in the first column. If the owner himself is not familiar with the names of the cows it is essential that means of identification should be provided.

Dates of service and dates of calving or abortion (if such an occurrence took place in the last three months) are then filled in. Each cow is then examined and if found to be pregnant a "star" is placed in column 4. Cows found to be suffering from infertility are treated after the whole herd has been examined. Any cow found to be pregnant then has column 3 completed. If the last date of service is known and rectal examination confirms pregnancy of this duration, column 3 is completed by reference to a calving table. Failing that, the approximate month of expected calving is inserted. When treatment of infertility is given a record is made in the remarks column.

A note book is kept at the surgery for each herd, on the cover of which is recorded the parish in which the herd is situate, times of milking, class of herd, disposal of milk, months of routine inspection for the Ministry, date of undertaking and period, Ministry's reference number, etc. Provision is also made for recording the number of calves, heifers, cows and bulls on the farm at each quarterly visit. Such a record assures that the farmer does not overlook any heifers or dry cows which are not available at the time of the visit and reference to the previous visit's record, coupled with a quick cross examination as to any heifers and cows bought or sold, helps to keep one acquainted with the exact number of animals on the farm. Inside the note book a record is made of each visit to the farm and after each visit a careful record is made of any history of mastitis, etc., coupled with a note of laboratory findings and treatment prescribed. Originally such a book was left on the farm and the farmer asked to record any details in connection with the working of the scheme, but difficulties were experienced in persuading the farmer to keep such records and it was found advantageous to have available records at the surgery.

If the system outlined is carefully followed, even if different assistants visit the farm, a fairly concise picture of the history of disease in the herd will be readily available.

. . . . . .

Equipment of Car for Use in Agricultural Practice

Q. LXIX.—*I have just purchased a practice in an agricultural district. Can you give me any advice on the stocking and equipment most suitable for a motor car for ordinary everyday work?*

A.—The answer must depend upon the nature of practice—large- or small-animal—official work, control scheme work, whether the practice is "concentrated" or spread over a large area, and so on.

It is usual to try and carry sufficient drugs and appliances to enable one to do everyday routine work, but it is a mistake to try and carry too much.

The writer never normally carries equipment for major operations, which are usually done by previous appointment (casting tackle, chloroform masks and a vast assortment of instruments), nor does he carry appliances used for specific purposes for conditions normally diagnosed by owner (probang, obstetrical instruments, bull-ringers, dental instruments, etc.).

In the way of equipment the following is suggested: rubber boots; rubber coat for official use; rubber apron and sleeve protector; "sterility box" containing uterine forceps, catheter, pessaries, soap, iodine sol. (conc.), dettol, injector and towel. Pair "bull-dogs," mouth gag, foot knife, trochar and canula, stomach tube and pump, twitch, stethoscope, thermometer, scalpel, forceps, some form of injector in steriliser, 2, 5 and 20 c.c. syringes, needles and epidural needle. Bandages, elastoplast bandages, cotton wool and suture materials. Tuberculin testing equipment and small white tray. Castrating equipment, *post-mortem* outfit, sterile blood tubes and milk bottles, strip cup, adjustable halter and bullock rope.

The writer finds a shallow drawer an excellent container for drugs and carries the following: two calcium injections, one magnesium injection, one glucose injection, one sod. iodide injection, two or three bottles of excipient, dettol, ammon. carb., strychnine, chlorodyne, spirits ether nit., formalin, chloral, liniment and wound dressing; sulphanilamide powder and an "opening drink" or two; some ointment and an aperient electuary for horses. In his bag the writer carries the following: tetanus antitoxin, pituitrin, adrenalin, nikethamide, stilboestrol, local anaesthetic; P.M.S., distemper, bronchisepticus, leptospiral and swine erysipelas sera, some soluble sulphonamide, Pirevan or Piroparv, cocaine oculets and choline injections, some non-specific vaccine as "Yatren," "Omnadin," etc., and nembutal.

If doing small-animal visits some stock remedies are useful—laxative, astringent, tonic, sedative, etc.

A good electric torch is vital. The writer uses (and finds invaluable) an electric head-lamp. A diary and note book should always be carried.

Considerable wastage can occur from the manner in which these various requisites are carried and it will probably be found economical to have a box constructed to fit the car in which 8 oz. and 24 oz. bottles of medicine and packets of powders, etc., can be carried.

A leather case facilitates easy and tidy transport of smaller instruments and dressings.

The drawer type of case is also of great value in carrying tuberculin testing equipment, sera, vaccines, hypodermic syringes, gelatine capsules and physic balls, etc.

Further suggestions on this subject from practitioners would be particularly welcomed.

Modern Methods of Book-keeping

Q. LXVIII.—*As a result of the extension of our practice I am experiencing considerable difficulty in my book-keeping methods. My fees are derived from an extensive agricultural practice and a small-animal practice which necessitates the boarding and treatment of small animals, surgery consultations and visits. I have three qualified assistants. What do you consider to be the best method of book-keeping for this type of practice?*

A.—In a type of practice similar to the one mentioned, the following method of book-keeping, using a card index system, has been found most successful.

Each assistant has his own day-book into which are entered all the details of the work carried out, the fee to be charged being placed in the margin. A card of the type illustrated is made out for each client, and only the date and the fee are transferred from the day-books on to this; the entries on the card may be identified by placing beside the fee the initials of the person who carried out the work. If a detailed account is required this can be obtained with the minimum loss of time by referring to the card in conjunction with the day-books.

If an animal is admitted for boarding or is detained for treatment, a 'hospital card' as illustrated is made out by the assistant admitting the animal. When the animal is discharged, its card is placed inside the client's folded card where it remains until the account is paid; it is then either destroyed or filed independently for subsequent reference. If the hospital card system is used, it is only necessary to enter on the client's main card the dates of admittance and discharge and the total fee.

Owner..... Address.....

Patient..... Breed, Sex and Age.....

Ailment..... Articles Left.....

Admitted..... Discharged.....

Date	Items, Prescriptions, Notes	Fee Received	Fee Booked	Date	Items, Prescriptions, Notes	Fee Received	Fee Booked

Name.....

Address.....

Dr.	Accounts Rendered	Cash Received	*Cr.*	*Dr.*	Accounts Rendered	Cash Received	*Cr.*

Accounts are sent out quarterly, the amount of the account as rendered, and the date, being recorded on the front of the client's card. When the accounts are paid, and if there is no entry for the current quarter, the card is removed from the drawer and filed in a separate one to facilitate handling.

. . . . .

Death Following Vaccination Against Swine Erysipelas

Q. LXX.—*What is the cause of death in pigs following vaccination against swine erysipelas?*

A.—There is no obvious reason why pigs should die following the injection of either swine erysipelas vaccine or serum.

More information is required to reach a tentative diagnosis. What type of erysipelas was involved? If the peracute type it is probable that the pig was in the incubative stage of the disease at the time of the inoculation. How many animals actually died? If a number died some other explanation would be required. Was a *post-mortem* examination carried out and, if so, what were the findings? The *post-mortem* findings should supply valuable information.

Correspondence

Removal of Growths on Penis of Bull

Sir,—I noted with interest the answer given in this week's *Record* to the question on removal of warty growths from the penis of the bull. May I suggest a far simpler technique? Have the bull led up to a cow in oestrus. As erection occurs grasp the penis firmly with a clean silk handkerchief. Retraction will take place immediately and the "wart" is pulled off. Haemorrhage is insignificant. This technique sounds somewhat "rough and ready," but has the advantages of (*a*) causing least inconvenience to the patient; (*b*) causing the minimum of tissue damage; and (*c*) putting the animal out of commission for a few days only. I claim no originality for this method, having heard it described at a meeting of the Royal Counties V.M.A. some years ago.

Aylesbury. Yours faithfully,
April 23rd, 1945. L. Guy Anderson.

. . . . .

"Beta Haemolytic Streptococcus Infection of Dogs"

Sir,—The letter contributed by Mr. W. B. Brownie and published in your issue for March 24th prompts me to challenge that gentleman's statement that a streptococcus vaccine is *very efficacious* against an *acute* infection. I have always understood that acute infections were not amenable to treatment by vaccines; but as I see that sulphonamides were prescribed simultaneously, any success in treatment could have resulted from chemotherapy. Mr. Brownie then alleges cures of feline gastro-enteritis by the use of a *Beta haemolytic streptococcus* vaccine. I would like to be sure that he really means gastro-enteritis and not the specific enteritis of cats, for which no successful treatment has been devised up to date.

The specific acute disease to which I refer is extremely malignant, resulting in death usually within 48 hours, and has no connection with the complications of distemper. I think it is generally accepted to be a virus infection, and although I have accorded more than 25 years to the study of it, I have yet to meet with any person who can truthfully claim to have discovered its successful treatment. Certainly *no* vaccine can do so.

It does appear to be true that in very many cases either of good or ill health the *Beta haemolytic streptococcus* can be demonstrated in swabs taken from the tonsils and vagina, which fact is bound to leave one somewhat sceptical as to whether this organism figures aetiologically in many cases of sickness. Mr. Brownie says he gives *cats which look very ill B. coli* serum and *Beta haemolytic streptococcus* vaccine with good results. What value can one place upon such a statement in the absence of the proved cause for *looking very ill*?

Yours faithfully,
"Croyland," H. Kirk.
658, Finchley Road, Golders Green, N.W.11.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

May 8th.—R.C.V.S. Council Elections—last day for nominations.
May 9th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2.30 p.m.
May 17th.—Meeting of the South-Eastern Division, N.V.M.A., at Maidstone (Royal Star Hotel), 2.30 p.m.
May 22nd.—R.C.V.S. Council Election—Voting Papers issued.
May 29th.—R.C.V.S. Council Election—Voting Papers to be returned.
June 5th.—R.C.V.S. Annual General Meeting.
June 6th.—R.C.V.S. Committee and Council Meetings.

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N.V.M.A. President's Return

Members of the Association will learn with great pleasure of the safe return to this country of Professor Wm. C. Miller, following the completion of the tour upon which he set out in January at the behest of the Colonial Office. It is hoped that there will shortly be available from the President himself an account of the visit thus paid to most of the British Dependencies in the Caribbean area, where he has made a survey of the conditions of breeding, feeding and management of livestock, the survey forming part of the work being organised by Sir Frank Stockdale to establish a greater measure of self-sufficiency and self-dependence in the British West Indian countries. The President also paid a short visit to the U.S.A., taking the opportunity, as requested by Council, N.V.M.A., to convey greetings to the American Veterinary Medical Association.

. . . . .

As foreshadowed in this section last week, the Acting President, too, has travelled to good purpose and in the correspondence columns of this issue Major Hancock reflects the enjoyment and significance of the outstanding event in the history of the profession in Northern Ireland which took place at Belfast on Thursday, April 26th.

* * * * *

N.V.M.A.—N.F.U. Liaison Committee

The first meeting of the above Committee was held at 45, Bedford Square on Tuesday of last week, with Mr. McClean, Vice-President of the National Farmers' Union, in the chair. Other representatives of the N.F.U. were Mr. Gibbard (Chairman, Livestock Committee), Mr. Salter Chalker (Chairman, Diseases of Animals Committee) and Mr. Panes (Vice-Chairman, Milk Committee). The National Veterinary Medical Association was represented by Major Hancock (Acting President), Mr. G. N. Gould (President-Elect), Mr. Steele-Bodger and Mr. T. L. Wright (Hon. Secretary).

During the course of the proceedings the N.V.M.A. representatives indicated the steps taken by the Association in recent years to promote and further preventive medicine. The work of the Committees dating from 1937 and the publications issued by the Association were referred to and it was promised that a complete set of these publications would be made available to the Union, whose representatives expressed their deep appreciation of the value of this work both to the veterinary profession and to agriculture. It was suggested that veterinary surgeons should be co-opted or asked to join Technical Development Committees of the Union in the counties and also to offer their services in the Farmers' Discussion Groups. The N.F.U. representatives promised to elaborate this suggestion at a later date.

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R.C.V.S. Council Election

ADDRESSES OF CANDIDATES

The addresses of candidates for election to Council, R.C.V.S., will be published in our issue of May 19th. Those who desire to submit such addresses are requested to note that they must be received by the Editorial Representative, N.V.M.A., 36, Gordon Square, London, W.C.1, not later than Monday next, May 7th, and that they must be limited to 250 words.

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PERSONAL

Births.—Heeley.—On April 3rd, 1945, to Kay, wife of D. M. Heeley, M.R.C.V.S., of South Lodge, Marden, Kent—a daughter.

Howell.—On April 20th, 1945, at 27, Welbeck Street, to Delorah Howell, M.R.C.V.S., and Lieut. M. A. Howell, R.E.M.E.—died on active service in Italy March 26th, 1945—a son.

Twiss.—On April 6th, 1945, to Margaret, wife of A. F. Carrington Twiss, M.R.C.V.S., Connielea, 177, Mill Road, Clydebank—a daughter, Marlene Anne. Both well.

Ziffo.—On April 19th, 1945, at the Rubislaw Nursing Home, Aberdeen, to Catherine, wife of George S. Ziffo, B.Sc., M.R.C.V.S.—twin sons (one stillborn).

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R.C.V.S. OBITUARY

Gilford, Norman, 17, High Street, West Wickham, Kent. Graduated London, December 17th, 1902. Died October, 1944. (Notification just received.)

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GENERAL OBITUARY

MISS MOYA RIMINTON

Her many friends in the veterinary profession will be grieved to know of Miss Riminton's sudden death on April 22nd, at the early age of 33. She had been apparently in perfect health, and was on duty at the Imperial Bureau of Animal Health up to within a few hours of her death.

Miss Riminton joined the staff of the Bureau early in 1930 and was made responsible for the routine of production of *Index Veterinarius*. With her capacity for tremendous enthusiasm, she became absorbed in the work of reviewing current veterinary literature, and acquired a unique knowledge of the publications of the past 15 years. Although not an accomplished linguist, she had an intimate knowledge of the current scientific literature of every country. Some 100,000 references have passed through her hands to be classified and to be checked and rechecked at every stage of publication of the *Index*.

A tenacious memory for the names and activities of veterinary workers all over the world was one of Miss Riminton's many valuable attributes, and there will be many who will miss this almost encyclopaedic knowledge, and the cheerful readiness with which it was made available to enquirers. Those who knew her great ability and capacity for constructive comment valued her as a consultant, not only as regards published literature, but also in the preparation of their own papers.

In order to improve her capacity for responsible work in the Bureau, Miss Riminton had seriously considered the taking of a veterinary qualification, but had finally decided to take a Science degree as an external student of the University of London. She took up her studies with really remarkable zest and enthusiasm, and at the time of her death had already made great progress towards her goal. It is greatly to be regretted that such a useful and interesting career should be so early and unexpectedly terminated.

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ADDRESSES OF DISEASE-INFECTED PREMISES

FOOT-AND-MOUTH DISEASE:

Essex.—Woodview, Church Road, Wickham Bishops, Witham (Apr. 28th); The Market, Chelmsford (Apr. 27th).
Monmouth.—Cupid's Hill Inn, Grosmont, Hereford (in the County of Monmouth) (Apr. 28th).
Yorks.—Leases Farm, Leeming Bar, Northallerton (Apr. 26th).

SWINE FEVER:

Angus.—Newmill, Eassie and Nevay (Apr. 25th).
Beds.—Vicarage Farm, Kempston (Apr. 24th).
Derbyshire.—Shelton Cottage, Shelton Lock, Shardlow, Derby (Apr. 25th).
Dunbartonshire.—No 2 Holding, Newdyke, Kirkintilloch (Apr. 24th).
Durham.—Piggeries back of Upper Archer Street, Darlington (Apr. 28th).
Essex.—Mercer's Farm, Colchester (Apr. 24th); Mill Farm, Mill Street, Brightlingsea, Colchester (Apr. 26th).
Hants.—Ivy Lane, Ellingham, Ringwood (Apr. 25th).
London.—The Destructor, Whitehart Road, Plumstead, Woolwich (Apr. 25th).
Midlothian.—8, Longstone Road, Edinburgh (Apr. 24th).
Norfolk.—Hall's Farm, Kirby Bedon, Norwich (Apr. 24th); Glebe Farm, Saxlingham, Field Dalling, Holt; No. 5 Allotment, Weybourne Road, Sheringham (Apr. 25th); 14, Sharrington, Melton Constable (Apr. 26th).
Worcs.—Upper Hollins Farm, Pensax, Abberley (Apr. 24th).
Yorks.—Higher Bentley Farm, Shelf, Halifax (Apr. 24th); Bennett's Farm, Moss Road, Askern, Doncaster (Apr. 25th); Holdsworth Farm, Holmfield, Halifax; Grove House Farm, Walton, Wakefield (Apr. 28th).

SHEEP SCAB:

Denbighshire.—Cefn Coed, Glyn Ceriog, Wrexham; Caedicws, Glyn Ceriog, Wrexham (Apr. 23rd).
Merioneth.—Caegoronwy, Bontddu, Dolgelley (Apr. 23rd).

WILTS PROPOSAL FOR VETERINARY STUDENT SCHOLARSHIPS

At a recent meeting of the Wilts Agricultural Committee several farmers emphasised the great shortage of veterinary surgeons. Mr. R. W. Horton moved "That this Committee is concerned at the shortage of qualified veterinary surgeons and urges the Education Committee to take steps to provide scholarships for students with suitable qualifications to enter the profession." Mr. S. Pond said it was almost as expensive for a student to qualify as a veterinary surgeon as it was to become a doctor and he saw no reason why it was not possible for the whole of such cost to be met by the community. Mr. R. Stratton said the county could not spend £1,000 in a better way.

The resolution was carried.

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AMERICAN VETERINARY SERVICE FOR FOREIGN COUNTRIES

The extensive plans of the (United States) Army to undertake animal disease control in occupied and liberated countries, observes *Veterinary Medicine* in its current issue, are indicated by the large number of veterinary officers who are being sent to the School of Military Government, Charlottesville, Va. Eighteen veterinary officers are now on duty at the school.

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The fund instituted by the bloodstock industry to assist veterinary research stands at well over £60,000.

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Holland, Lincs., Agricultural Committee were informed that only two cases of swine fever had been confirmed during the past quarter, and the epidemic appeared to have abated.

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The Ministry of Agriculture and Fisheries announces that, subject to minor changes in the conditions of the scheme, the payment of subsidy for cattle kept on hill land in England and Wales will be continued this year at the same rate as in 1944, namely, £3 for each eligible animal.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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N.V.M.A. ACTING PRESIDENT'S VISIT TO NORTHERN IRELAND

Sir,—I have just returned from Belfast, where last Thursday I represented the National Veterinary Medical Association of Great Britain and Ireland at a dinner given by the North of Ireland V.M.A.

I arrived at Belfast after a tiring journey of some 18 hours from London. I was greeted at the station by Dr. Lamont, who drove me to my hotel, and did not leave me until assured that I was well and truly looked after. His kindness was promptly taken up by two more members of the profession who insisted first on providing me with a gargantuan luncheon of pre-war dimensions, and then taking me over the veterinary research laboratories at Stormont. Not content with this, two more eminent members of the State Veterinary Service entertained me to dinner in the evening. I was thus, under the happiest circumstances of non-stop hospitality, able to assure myself in what vigorous, flourishing and satisfactory conditions the veterinary profession works in Northern Ireland. There exist as between Government and the State Veterinary Service complete and friendly relations; the comings and goings of their staff and research workers between the general practitioners on the one hand and the farmers on the other are again frank and free. In short, a veterinary paradise that can teach us many lessons over here.

The dinner, which was of most imposing dimensions, was attended by the Prime Minister, Sir Basil Brooke; the Ministers of Agriculture and of Health, the Vice-Chancellor of Queen's University, and many other distinguished people, representing medical, legal and agricultural interests. The toast of the Veterinary Profession was most aptly and cleverly proposed by a lady farmer, and was replied to jointly by your representative and Professor Browne, of Dublin.

Surely there has never before been a veterinary function of such importance, where a Prime Minister, recalling in most felicitous terms the visit of the N.V.M.A. to Belfast in 1935, expressed the hope that we should make Belfast the venue of our first full-dress Congress after the war, and extending an invitation to this end on behalf of the Government of Northern Ireland. And later in the evening the Vice-Chancellor of the University offered the profession full faculty status if and when they wished to establish a veterinary college within the University!

Such, then, are the bare outlines of quite the happiest mission I have undertaken for the Association during my years of office, and I hasten to take this opportunity of informing the profession of the facts, which deserve to be universally known and appreciated.

Yours faithfully,

Greenacre, Beaconsfield. R. C. G. Hancock.
April 29th, 1945.

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VETERINARY EDUCATION

Australian Experience of University Association

Sir,—The reports of the Loveday Committee and the views expressed in your columns in discussions and letters have been read with great interest in Australia, not only by members of the Royal College, but also by Australian graduates. The controversy which the Loveday Report has aroused in Britain has a special interest for us because we live and practise our profession in a country where veterinary science is taught by the Faculty of Veterinary Science of a university. The university system of Australia is modelled upon that of Britain, and since all of us are, or have been, members of a Faculty of Veterinary Science and have thus seen the teaching of veterinary students as an integral part of university education, we believe that our experience and opinions may be of some interest to the profession in Great Britain. At the outset we may say that we find it difficult to understand the extreme distrust and resentment of the Loveday Committee's proposals which have been expressed by some of your correspondents.

At the present time there is but one veterinary school in Australia, namely, that at Sydney University. The Queensland school closed in 1942 owing to war-time difficulties, and the Melbourne school closed in 1928. Over a number of years, however, two universities were teaching veterinary science simultaneously, the courses leading to the degree of B.V.Sc. Each university conducted its own examinations, the examiners being veterinarians whenever that was necessary to the proper conduct of the examination. The examiners were the lecturers concerned assisted by external examiners who were appointed by the university on the recommendation of the faculty. It might have been better—who can say?—if the same panel of examiners had examined the students at Melbourne, Sydney and Brisbane, but the fact remains that graduates of these schools are of comparable ability, are accepted on an equal footing, and do equally good work in the various states of the Commonwealth, both in private practice and in official positions.

In the future veterinary science may be taught in States other than New South Wales and possibly in New Zealand also, but, if so, it will certainly be taught in universities. No one would contemplate anything else; in fact the strongest opposition to any other suggestion would come from the veterinary profession itself. Some of us have thought that advantage might accrue from the establishment of a Board of Veterinary Studies which would be officially recognised by the universities as the body best able to advise on any alterations in the course of instruction. However, we do not feel very strongly on the matter because most of the members of the faculty are veterinarians, the Dean has always been a veterinarian, and our relationship with other faculties of the University is one of equality and friendship. Why should it be otherwise? However, the Loveday Report provides for the continued activity of the R.C.V.S., which no doubt would perform such a function admirably and continue to control the registration of veterinarians. In Australia registration is controlled by Veterinary Surgeons' Boards which are statutory bodies responsible to the various Ministers of Agriculture of the different States.

Thus we, who are members of the Royal College of Veterinary Surgeons and have in addition first-hand experience of the system of veterinary education which the Loveday Report recommends, believe that this system is at least a suitable one for the Dominions. Admittedly, the "one portal of entry" has advantages and we can appreciate the dislike of older members for alterations in a system which has worked satisfactorily for many years. However, these advantages need not be lost in their entirety and they are far from compensating for all that students and the profession in Britain are losing, and have lost, through separation from the universities.

We do not wish to imply that veterinary science is taught to perfection in Australia. We are constantly attempting to improve it. The Australian Veterinary Association has a Standing Committee on Education which is now examining the curriculum and

facilities at the Veterinary School in detail. When this work is completed, its recommendations will be made through the faculty to the senate of the University. Thus the University will be informed of the profession's opinions as to how veterinarians can best be trained to meet the changing needs of the times and serve the nation best; we have every reason to believe that our views will always be carefully and sympathetically considered.

Finally, as members who have seen both the relative isolation of veterinary students in Britain and the common life which they share with students in other faculties when their undergraduate days are spent at a university, we wish to emphasise the great indirect advantages of the latter system. Antagonism towards members of other professions and a sense of inferiority are very apt to be engendered by any system which isolates one group of students from all others. In a university students of medicine, science, engineering, agriculture, law, veterinary science and arts come in close contact with each other; they share some classes; they room and feed together in College; belong to the same University Union upon the Council of which they have proportional representation; there are inter-faculty sports, dances and numerous other university activities in which they share on a basis of equality. Each comes to know something of the other fellow's job in life and the understanding and fellowship thus forged in student days endures. This has an important bearing on the social relationships and happiness of members of the profession and greatly enhances its welfare and the efficiency of its service to the community.

We have no desire to interfere in what members of the profession in Great Britain may regard as their own domestic problem, but we believe that our opinion, being based on actual experience, may be of some help and that the matters raised by the Loveday Report are fraught with so much significance for the future of the profession that it behoves all members to contribute whatever constructive comments their experience warrants.

Yours faithfully,

DUDLEY A. GILL.
R. M. C. GUNN.
MAX HENRY.
WM. L. HINDMARSH.

The University, Sydney, N.S.W.
March 29th, 1945.

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Sir,—For some years now, and especially during the past 12 months, a considerable number of members of the profession have by persistent condemnation of the present system of teaching facilities and examining veterinary students, coupled with a stupid and unjustifiable attitude as to our general standing, created a state of affairs which has assumed serious proportions and which I think warrants intervention. These members have been granted a lengthy innings and one that it is about time to terminate rather than to tolerate with supine detachment. To be lenient and charitable towards those zealots of the left one might acquit them by merely accusing them of suffering from a serious inferiority complex, but unfortunately their affliction has repercussions which obviously influence those too inexperienced to ward against them and at the same time shows gross disrespect to and lack of appreciation of the achievements and standing of many hundreds of the most capable of professional men—indeed to the great bulk—who have established a just claim to be as highly thought of and as worthy as are the members of any of the other learned professions. Collectively the profession has serious defects but as individuals its members are second to none. That is not an over-statement but a hard fact which no one viewing our position in its true perspective can refute. It was Rosebery who said "Men must judge men not absolutely but relatively as they would themselves be judged. Circumstance, epoch, environment, training and temptation must all be taken into account if you would judge the virtues of mankind."

The memorandum, published in *The Veterinary Record* of March 24th, 1945, and apparently drawn up by an original group of five members, dealing with the "Proposed Further Participation of the Universities in Veterinary Education," offers or provokes a suitable opening to deal with this question and to take stock. This group of five, who are all graduates of the R.V.C., includes three who are also graduates in Arts at famous universities and presumably to some extent a sample of what they hope to produce from their proposals if accepted. If that is so they have in paragraph III of that memo., besides offering a gross insult to the vast majority of the profession, provided a most astounding rebuttal of their own claims, because for inanity and vague generalities that paragraph could scarcely be surpassed. If a university education would lead to "broadening of outlook," "development of character" and "wise citizenship," it seems reasonable to assume that as the bulk of those attending universities graduate in Arts and Pure Science and subsequently seek a livelihood in the teaching profession and the Church, those classes possess three qualities that are lacking in those not so educated—a bold but fantastic claim and one which very few mature and unbiased minds will endorse any more than they would assert that he who leaves the secondary school at the age of 17 to embark upon a business career is usually lacking in these very desirable assets. Are the Montgomerys and Alexanders, the Cunninghams and Somervilles who were trained in the "strictly vocational institutions" of Sandhurst and Osborne also devoid of those most laudable and enviable possessions? Personally I prefer to rely on Hazlitt, who said: "The most sensible people to meet with in Society are men of business and the world, who argue from what they see and know instead of spinning cobweb distinctions of what they ought to be."

The main thing lacking so far as the profession is concerned, especially since the end of the Great War, has been, amongst students, their ignorance of the domesticated animals and husbandry in general, a defect that no teaching, university or otherwise, can remedy, and contrary to the ideas of those who claim that university life would be a means of enlightening others who "are unaware of the activities of the veterinary profession," those who might benefit from such association are not to be found at universities. The majority of our future clients are not to be found there, nor are they concerned as to where or how we obtain our professional knowledge so long as we deliver the goods and at an economic rate. The day is past, and the war has hastened its passing, when the stock-owner, or any other person of intelligence for that matter, was influenced by a string of degrees and if any of our professional fledglings because of being in possession of a university training or a degree believes that he has been accorded a passport or even an asset to ready success, a short period of general practice where competition is fiercest and favours are unknown will assuredly cause him to amend his ideas.

But why should it be thought incumbent for the veterinary surgeon to enlighten any but his own clients? In this district and much further afield, where the standing of the profession is at least as high as that of those engaged in medicine and the law, there has been no unqualified practitioner in existence for at least half a century—not even the village castrator so highly commended by the Committee enquiring into Veterinary Practice by Unqualified Persons; nor is there in existence that most objectionable member of the agricultural community, the jobbing dealer—both of whom are a sure indication of out-of-date husbandry, for the reason that the stock-owner is much too enlightened to treat with them, and in districts where they flourish South of the Tweed the intelligence and outlook of the stock-owner are on a similar plane. This state of affairs has not been brought about by the practitfoner, but by the stock-owner himself.

Those who are ignorant of veterinary qualifications, values and achievements, are equally ignorant of many other matters and possessed of an ignorance that is invincible. We ourselves are ignorant of matters that are not of concern to us, and it is not to be expected that a profession so numerically small and which has only a *direct* concern for the small minority can be as widely appreciated as those which cater for all.

The stark and unpalatable truth is that for the past 25 years or so many of those entering the profession have done so casually or adopted it for no particular reason or were thrust into it by unthinking or ill-advised parents and find themselves not at all fitted for it nor for tasks and a life which to them is neither interesting nor congenial. That being so, there is little justification for their belittling it and its members instead of striving to reach efficiency in at least some branch of it.

A century and a half ago, and before Robert Burns' worth was appreciated, he was obliged to eke out a livelihood by becoming an exciseman. On accepting the post he wrote in a letter to a Bishop: "I know there is a stigma attached to excisemen, but I do not intend to *borrow* honour from any profession." Let those who decide to enter the veterinary profession—especially if they afterwards regret it—pay heed to the utterance of the bard. And as regards university training and afterwards let them remember that Edward Gibbon, after spending 20 years amongst the élite and learned Societies of London and Paris, when asked why he sought to exile himself in Switzerland, replied: "I am too modest and too proud to rate my value by that of my associates."

There is as yet little perceptible evidence that those blessed with a university training and degrees in Science or Art and competing in the open field are singling themselves out in the lead either as veterinarians or otherwise.

Yours faithfully,

Brechin, Angus WM. S. PETRIE.
April 13th, 1945.

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Notice to Correspondents

In view of the interest which has been aroused in certain current topics, the Editorial Committee has allowed considerable latitude in regard to the length of published letters. Owing to the continued stringency of the paper situation, however, the Committee again finds it necessary to urge correspondents to restrict their communications to a maximum of 350 words.